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Sheridon

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[54] PSEUDO-FOUR COLOR TWISTING BALL
DISPLAY

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[57]

ABSTRACT

A seven-segment ball for an electrical twisting ball display device made up of spheroidal balls rotatably disposed in an elastomer substrate. The device built with the seven-segment balls can provide, for example, two fully saturated colors, two partially saturated colors, and a background color, such as white. The ball is composed of seven segments arrayed substantially parallel to one another, each segment being adjacent to at least one other segment and to no more than two other segments, adjacent segments being adjoined to one another at substantially planar interfaces. The seven segments include a transparent central segment, transparent first and second exterior segments, and four colored interior segments, two on each side of the central segment. For example, the first, second, third, and fourth interior segments can each have different colors such as red, black, blue, and green. The ball has an anisotropy for providing an electrical dipole moment, the electrical dipole moment rendering the ball electrically responsive such that when the ball is rotatably disposed in an electric field while the electrical dipole moment of the ball is provided, the ball tends to rotate to an orientation in which the electrical dipole moment aligns with the field. Also disclosed are: an apparatus made up of a substrate in which are disposed the aforementioned balls, together with electrodes to facilitate a rotation of balls rotatably disposed therein; and a method for using this apparatus.

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27 Claims, 32 Drawing Sheets

